

CLAIMS

What is claimed is:

1. A tool for forming a reinforcing bar connection comprising opposed drivers adapted each to engage a seat supporting a tapered sleeve positioned over bar ends, and means to drive the seats axially of the bar ends to force the sleeves over a jaw assembly positioned on the bar ends to cause the jaw assembly to contract and grip the bar ends.
2. A tool as set forth in claim 1, including a pair of arms each engaging a respective seat for movement toward each other.
3. A tool as set forth in claim 2, including power means to move said arms toward each other.
4. A tool as set forth in claim 3, including cam means translating movement of said power means to said arms.
5. A tool as set forth in claim 2 including a collar forming the respective seats, and a self-releasing collet in each collar.
6. A tool as set forth in claim 3 wherein said power means comprises a piston-cylinder assembly, and a cam roller driven by said piston-cylinder assembly to move said arms.
7. A tool as set forth in claim 6 including a cam on one arm engaging said roller, and a tension link connecting said roller to said other arm.
8. A tool as set forth in claim 7 wherein said arms are coaxially pivoted together.
9. A tool as set forth in claim 8 wherein said piston-cylinder assembly is pivotally supported by a mounting bracket extending from said coaxial pivot and secured to one arm.
10. A tool as set forth in claim 6 including two cam rollers driven by said piston-cylinder assembly, and a cam on each arm engaging a respective roller.
11. A tool as set forth in claim 10 including truss means connecting said rollers and to said piston-cylinder assembly.
12. A tool as set forth in claim 11 wherein said arms are pivoted to said piston-cylinder assembly each on opposite sides thereof.
13. A tool for forming a reinforcing bar splice comprising a pair of pivoting arms, the distal ends of which form oppositely facing drivers adapted to engage seats receiving oppositely facing tapered sleeves positioned over aligned bar ends,

and power means to drive the seats axially of the bar ends to force the sleeves over a jaw assembly positioned on the bar ends to cause the jaw assembly to contract to grip and splice the bar ends.

14. A tool as set forth in claim 13, including a fluid piston-cylinder assembly operative to pivot said arms to drive the seats axially of the bar ends.
15. A tool as set forth in claim 13 including cam means driven by said power means to obtain a mechanical advantage in movement of said seats.
16. A tool as set forth in claim 14, including means to apply pressure to the blind end of the piston-cylinder assembly to force the sleeves over the jaw assembly.
17. A tool as set forth in claim 15 wherein said cam means is on one arm.
18. A tool as set forth in claim 15 wherein said cam means is on both arms.
19. A tool as set forth in claim 15, including roller means driven by said power means engaging said cam means.
20. A tool as set forth in claim 18 including respective roller means for said cam means driven by said power means.
21. A tool as set forth in claim 13 including the seats, and means to open and close said seats for positioning on said bar ends.
22. A method of forming a reinforcing bar coupling comprising the steps of placing oppositely directed wedge sleeves over the butting ends of reinforcing bar to be joined, placing a contractible jaw assembly over the butting ends, seating the sleeves in collars, engaging the collars in a power operated driving tool, and then activating the driving tool to force the wedge sleeves toward each other and over each end of the jaw assembly to contract the jaw assembly and form the coupling.
23. A method as set forth in claim 22 including the step of using hydraulic pressure power means to drive said sleeves.
24. A method as set forth in claim 23 including the step of using cam means in combination with said hydraulic pressure power means to achieve a mechanical advantage to drive said sleeves.
25. A method as set forth in claim 24 including the step of driving said sleeves by engagement of said collars by the distal ends of pivoting arms.
26. A method as set forth in claim 25 including the step of coaxially pivoting said arms.

27. A method as set forth in claim 26 including the step of driving a roller against a cam surface on one arm, while linked to said other arm.
28. A method as set forth in claim 22 including the step of sensing the size of the bar and adjusting the force of the power operated driving tool.
29. A tooling assembly for driving self-locking wedge sleeves on the ends of a contractible jaw assembly to contract and grip end-to-end reinforcing bars to form a coupling, comprising a pair of oppositely directed collar assemblies surrounding said end-to-end bars and each containing a collet to seat and grip the sleeves, said tooling assembly engaging said collars to drive the collars and thus the sleeves toward each other and onto the ends of said jaw assembly to form the coupling.
30. A tooling assembly as set forth in claim 29 wherein said collets are self-releasing upon retraction of the tool.
31. A tooling assembly as set forth in claim 30 wherein said collets and collars are interconnected by sloping surfaces expanding the collet upon retraction.
32. A tooling assembly as set forth in claim 29 wherein said collars comprise a plurality of segments openable to permit assembly on and removal from the bar ends.
33. A tooling assembly as set forth in claim 32 wherein said segments are semicircular and held closed by removable keys.
34. A tooling assembly as set forth in claim 32 wherein said segments are hinged.
35. A rebar tool comprising power operated pivoting arms, the distal end of each arm being provided with a notch to accommodate bar passing therethrough, each distal end also including a bearing section on each side of the notch operative to engage and drive rebar tooling when said arms are closed.
36. A rebar tool as set forth in claim 35 wherein said bearing section on each side of the notch is slightly rounded to accommodate the swing of the arm.
37. A rebar tool as set forth in claim 36 including bar shear tooling driving by said arms.
38. A rebar tool as set forth in claim 36 including bar forming tooling driven by said arms.
39. A rebar tool as set forth in claim 36 including coupling forming wedge sleeve driving tooling driven by said arms.

- 40. A rebar tool as set forth in claim 35 including power means to close said arms, and cam means on at least one of said arms to cause said power means to pivot said arms.

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